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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,381	12/09/2003	Zhiyun Chen	2476-37	2846
23117 7590 01/23/2008 NIXON & VANDERHYE, PC 901 NORTH GLEBE ROAD, 11TH FLOOR ARLINGTON, VA 22203			EXAMINER JACKSON JR, JEROME	
			ART UNIT 2815	PAPER NUMBER
			MAIL DATE 01/23/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No. 10/730,381	Applicant(s) CHEN ET AL.	
	Examiner Jerome Jackson Jr.	Art Unit 2815	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20,27 and 40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20,27 and 40 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>11/2/07</u> . | 6) <input type="checkbox"/> Other: _____ |

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 20, 27 and 40 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Jain 6,797,412, of record.

The new limitations do not distinguish over Jain because the materials and sizes of the quantum dots in Jain enable the dots to "modulate" (absorb) in the ultraviolet wavelengths claimed. ZnCdSe/ZnSe or ZnCdSe/ZnSSe pseudomorphic cladded dots disclosed by Jain in column 5 clearly can absorb ("modulate") at 248nm, 193nm, or 157nm uV photon wavelengths. The claim language "operable" at one of these wavelengths clearly does not distinguish over the device of Jain likewise "operable" i.e. having the ability to absorb at these wavelengths. Applicant may be reading far too many limitations into the claims from the language "operable" and "modulation". The office equates these terms in the context of the present claims as being equivalent to an "absorption" or an ability to absorb at these wavelengths. Note there are also no particular nanodots (by exact materials and sizes) claimed to in any way structurally or functionally distinguish over Jain. Note also dots in Jain can emit or absorb in the uV wavelength in addition to other colors or wavelengths.

Claims 20,27 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cooper in view of Berggren, Murray and Wang, of record.

The previous rejection still applies.

Applicant's arguments filed 11/2/07 have been fully considered but they are not persuasive. Applicant argues significant modification of materials and structure would

have to be done to Jain to meet the claim language. To the contrary, no modification of the structure of Jain is required. Jain discloses a substrate with control circuitry (drivers) and nanoparticles capable of absorbing the uV wavelengths claimed. This is the totality of the claim language structure. An emitter as Jain can function as a detector, absorber, or "modulator" under reverse bias. The claims are broad and do not distinguish over Jain.

Regarding the nanodots of Jain not capable of emitting or absorbing in the uV range, applicant's arguments are unconvincing. The II-VI materials disclosed can emit or absorb in the uV wavelengths. There is no concrete evidence to the contrary. Applicant's assertions or arguments are not concrete evidence. ZnCdSe or ZnSe or ZnSSe can emit or absorb (modulate) in the uV range.

Arguments regarding Cooper, Berggren, Murray and Wang are also unconvincing of patentability. First applicant is treating the references individually rather than together for all they suggest. Berggren discloses a modulator based on nanodots. Together with the other applied references a uV nanodot based modulator "programmable mask" (Cooper) is suggested. Also, contrary to applicant's assertions, the CdSe nanodots of Berggren can "modulate" or absorb in the uV spectrum regardless of whether Berggren explicitly teaches so. Likewise Murray and Wang teach dots or dot materials capable of absorbing in the uV spectrum. The dots can absorb at more than one wavelength. There are no specifically claimed dots unequivocally structurally distinguishing over the dots of the applied art.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jerome Jackson Jr. whose telephone number is 571-272-1730. The examiner can normally be reached on M-Th.

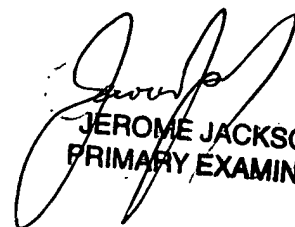
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Parker can be reached on 571-272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

jj


JEROME JACKSON
PRIMARY EXAMINER